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BLANK ROME LLP
600 NEW HAMPSHIRE AVENUE, N.W.
WASHINGTON, DC 20037

EXAMINER	
SEAL, JAMES	
ART UNIT	**PAPER NUMBER**
2131	21

DATE MAILED: 08/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/493,031	SAMID, GIDEON	
	Examiner	Art Unit	
	James Seal	2131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 November 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *17-23 and 34-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *17-23 and 34-39* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

1. This Action is in response to applicant's correspondences of 23 July 2003, 29 July 2002 and 18November 2002

2. Amendments to the specification

   a. page 9 line 18

   b. page 21 line 1

   c. 41 line 15

   d. page 70 line 4

   e. page 89 line 6

   have been entered.

3. Claims 1-16 previously cancelled

4. Claims 17-32 were added by amendment dated January 31, 2002

5. Claims 24-32 have been cancelled.

6. Claims 34-39 have been entered.

7. Claims 17-23, 34-39 are pending.

Drawings

8. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

Objection to Specification

9. With the amendments to the specification, objections to the specification are withdrawn.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claim 21 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 21 recites "a subset of *contiguous* vertices" but as the word contiguous means being in actual contact, touching, or connected throughout, however, two points can never touch mathematically because there is always a neighborhood around a point which does not include the point and so two points (vertices) can not be touching. This definition is of contiguous is consistent with the Oxford Dictionary 2nd edition (see enclosure). If the applicant, however, wishes to use the word contiguous to mean adjacent he should state for the record that this is what he means and only this or he should amend the claim to use the word adjacent. Rejection maintained. For future reference, when applicant refers to a reference he should provide a copy of that reference for the examiner.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

11. Claims 37-39 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one

skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The concept of defining a zone of vertices for a graph and using the concept as a method to encrypt plaintext could not be found in the specification. For the purpose of applying art the examiner will take zoning to mean using some specified subset of vertices of a graph.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. Claims 17-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Matias et. al. U.S. 4910772 A.

14. As per claim 17, the limitation of a method of encryption (see Matias, Column 2, lines 14 and 39) converting a plaintext into a first symbol set, for example, English letters to a data stream, is common to all common encryption and is called encoding. Matias first encodes the communication information (which may be video or standard communication data stream, that is, plaintext, Column 4, line 22-23) into digital sequence of addresses (Column 4, lines 52-53, Column 7, line 25), and thus meets the limitation of converting plaintext into a first symbol set. Matias meets the second limitation of creating a set of vertices which is associated with the first symbol set by

forming an grid with the location of each vertex (pixel) given an address, the vertices depending on the original (first) symbol set (Column 2, lines 15-16, Column 5, lines 46-51). Matias meets the third limitation of defining relationship for pairs of vertices in the set of vertices (Matias' vertex grid or grid graph, Column 5, lines 57-60) wherein the relationship are expressed by vectors as determine by a pair of vertices. Matias meets the fourth limitation which uses the vectors to identify a path composed of at least one vector (Column 5, lines 56-59) and hence a second symbol set (up U, down D, left L, or right R, Column 6, lines 65-66) which are then used to specify the path. Matias does not limit his grid or graphs to rectangular arrays (Column7, lines 10-13) or even two dimensional (Column 10, line 68). Claim 17 is rejected.

15. As per claim 18, the limitation that no two consecutive symbols in the first symbol set are the same is met by Matias in that every pixel has a unique address. Claim 18 rejected.

16. As per claim 19, the limitation that there are at least as many vertices as there are symbols in the first symbol set and that at least one vector is associated with a pair of vertex is met by Matias (Column 5, lines 46-51). Claim 19 is rejected.

17. As per claim 20, the limitation of defining a relationship for pairs of vertices such that no two vectors originate in the same vertex are being associated with the same symbols of the second symbol set is met by Matias (Column 2, line 46). Claim 20 is rejected.

18. As per claim 21, the limitation of creating a set of vertices, such that, the subset of neighboring vertices associated with a set of symbols of the first symbols relate to

vertices corresponding to any other symbols from the first set by a vectors originating in the first set of vertices and terminating in at least one vertex in the corresponding set of vertices. Matias meets this limitation as the addresses in the symbol set are associated with some subset of vertices, then addresses outside this domain of addresses will correspond to a different set of vertices but the vector associated with a pair of vertices one inside the other outside this domains are associated with symbols within the corresponding address of the first symbol set (Column 5, lines 45-51, lines 57-59, Column 6, lines 5--9). Matias teaches the use of a second set of symbols (L, R, U, D) with which to encrypt the data (Column 8, lines 45-50) and space filling curves (Column 7, line 53). Claim 21 is rejected.

19. As per claim 22, the limitation of informing a recipient of the sequence the symbols from the second symbol sets about the locations of the vertices (Matias' U, D, L, R) and a initial vertex (start) is disclosed by Matias (Figure 1 elements 10 and 18, Column 8, lines 58-60). Claim 22 is rejected.

20. As per claim 23, the limitation of generating different keys for different message using the same encoding is disclosed by Matias Column 7, lines 55. claim 23 is rejected.

21. Claims 17-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Krishnamurthy, Compouter Cryptographic Techniques for Processing and Storage of Confidential Information.

22. Krishnamurthy disclose a number of methods for transforming plaintext into a secure form which can be communicated over insure links such that the secure form

can be transformed back into the original plaintext, without any intervening party being able to perform such transformations. Krishnamurthy discloses a number of transformation techniques including base conversion, modular arithmetic (groups, rings and fields), logic (Boolean logic), matrix, topological, functional and hierarchical (see page 753). Krishnamurthy discloses (page 760) methods for creating ciphers using addressing of arrays (thus taking an array as a collection of vertices and addressing as a means of labeling such arrays) such that the encoded symbols (the first symbol set) are associated with an address-relational path (map) which is carried in the form of a description of heads (vertex), links (vectors) and ends of list (a designated point in the array the second symbol set). Claims 17-23 are rejected.

23. Claims 17-23 rejected under 35 U.S.C. 102(b) as being anticipated by Backal U.S. 6219421 A.

24. Backal discloses a method of encryption in which the content of message is not sent is not sent in its original (encoded form a first symbol set) or any transformation thereof, rather the encrypted message consists of a stream of pointers (vectors) to locations (address) (the second symbol set) in an arbitrary large array (of vertices) which serves as a (Virtual) key and thus allowing a very large key, the plaintext tracing out a path in the array. Claims 17-23 are rejected.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

25. Claims 17-23 and 34-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura, and further in view of Matsui.

26. As per claim 17, applicant recites an encryption method which rewrites plaintext into a sequence, creating a first encryption key, by creating a set of vertices and associating symbols with them, defining a vector space on the vertices, the vectors being associated with the symbol. Selecting a first vertex and a path from the first vertex and terminating at a second vertex. Identifying a second symbol identified to at least one vector comprising the identified path.

27. Nakamura and Matsui disclose a text string generated from a plaintext corresponding to a character graph $G_n = (V, E)$ where n is the number of vertices, V represents the vertices and E represent the links. Vectors are associated with the vertices V_i by equations (1) and (2). A path is constructed from the lines forming a loop-character vector. A second vector corresponding to this path represents the encrypted symbol (or symbol string). Claim 17 is rejected.

28. In claim 18, applicant recites a method with the limitations of claim 17 with the further limitation that to prevent consecutive symbol repetition nulls are inserted.

29. Nulls added to the symbol string many be interpreted as creating an equivalent graph in the Nakamura and Matsui discloser. This is necessary in order to get non trivial links in the graph. Claim 18 is rejected.

30. In claim 19, applicant recites a method with the limitations of claim 17, with the further limitations in which the number of vertices is at least equal to the number of symbols in the plaintext and that each vertex in the set of vertices is associated with at least one terminating and at least one originating vector.

31. Nakamura and Matsui encryption would included at least as many vertices as symbols as the plaintext string, the nulls making up the difference. The collection of vertex set is defined by terminating and originating vectors as seen above. Claim 19 is rejected.

32. In claim 20, applicant recites a method with the limitations of claim 17, with the further limitation that key generation results from a set of vertices such that no two

vectors originating in the same vertex are being associated with the same symbol from the second set of symbols.

33. Nakamura and Matsui use graphs to construct keys (eg. Figure 2 and section 2.3). Such graphs will not have no two vectors originating from the same vertex be associated with the same symbol otherwise the transformation is no one-to-one. Claim 20 is rejected.

34. In claim 21, applicant recites a method with the limitation of claim 17 with the further limitations that key generation where the process of creating vertices is such that a subset of contiguous vertices associated with a same symbol relates to vertices corresponding to any other symbol by vectors originating from in the subset and terminating in at least one vertex associated with a distinct symbol outside the subset.

35. Nakamura and Matsui construct key graph that are one-to-one but in such a way that equivalent graphs also have this same property. Hence even though we have a subset of equivalent graphs that are associated with the same symbol, these graphs must be distinct from other members of the set that represent other symbols. Matias teaches the use of a second set of symbols (L, R, U, D) with which to encrypt the data (Column 8, lines 45-50) and space filling curves (Column 7, line 53). Claim 21 is rejected.

36. In claim 22, applicant recites a method with the limitations of claim 17, with the further limitations of informing the recipient of the sequence of symbols from the second set that correspond to the first vertex in the set of vertices (starting point for creating the

sequence of symbol).

37. The starting point in the key is necessary for the recipient in order to decode the message. This is equivalent to agreeing on a key word (say in the Playfair cipher) and indicating the starting point in the key array. Claim 22 is rejected.

38. Claims 24-33 cancelled.

39. Claims 17-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over George Bush et. al. U.S. 5245658 A, and further in view of British War Office, Manual of Cryptography.

40. As per claim 17, the limitation of creating a set of vertices (Bush's domain in which the domain consist of points or vertices) is disclosed by Bush (see Column 3, lines 3-10, figure 1, figure 2, figure 3). The limitation of a first symbol set, for example ASCII characters, is disclosed by Bush Column 5, lines 10-20, that the symbols may also include repeats and nulls figure 2 and Column 5, lines 25-30, and the limitation that the first symbol set is used to label the vertices of the domain see figure 7. The limitation of a second symbol set is disclosed by Bush is disclosed column 1, summary, that is the message consist of a stream of coordinates which define the position of the vertices. The limitation that the domain (vertices) is a key is disclosed figure 7 and Column 4, lines 15-40. When communicator A wishes to send a message to B, A either goes through a central computer or sends a random number which identifies identifies the collection of vertices to be used. Thus the collection of vertices is created by a random number seed passed from communicator A to communicator B. Thus the collection of labeled vertices serves as the key in which the first data stream (ASCII

plaintext) is encrypted (column 5, lines 10-25. Thus Bush creates an encryption key from the collection of labeled vertices. Bush sends addresses of the vertices and does not implement the encryption by use of a path. However the Manual of cryptography, used by the British General Staff, War Office page 93 and 94 does teach the use of paths in which a collection of labeled vertices is read along a path with an initial point specified. One may use for example a second symbol set UDRL to describe the path. On of ordinary skill in the art would have been motivated to combine the teachings of Bush with those of the British General Staff, because the amount of information which can be sent by a path, for example its use in video data ecryption in both Nakamura and Matsui and this would certainly be the case in Bush's Fax machine. Claim 17 rejected.

41. As per claim 18, the limitation wherein no two consecutive sysmbols in the sequence of symbols are the same. Bush allows for the use of nulls and in the case of the path formulation as with the British General Staff nulls would have to be placed between double letters to prevent the path from losing information. Claim 18 is rejected.

42. As per claim 19, the limitation wherein the set of vertices comprises at least as many vertices as there are symbols in the first symbol set. Bush discloses domains in which the number of symbols is many times more than the number of symbols in the first symbol set. See Column 5, lines 10-15. In this case Bush associates N^3 vertices with N symbols. Claim 19 is rejected.

43. As per claim 20, the limitation of creating a key (a collection of labeled vertices) that no two vectors associated with the same vertex can be associated with the same symbol in the second symbol set. In a rectangular grid of vertices, as both Bush and

British General Staff suggest for at least one embodiment, the paths is *distinctly* defined that is by UDRL and so no two vectors emanating from the same vertex would yield the same letter in the second symbol set. Claim 20 is rejected.

44. As per claim 21, the limitation of creating a key, comprising a set of vertices such that is a subset of adjacent vertices being associated with the same symbols of the first symbol set is related to vertices corresponding to any other symbol from the first symbol set by vectors originating from vertices in the subset and terminating in at least one vertxex associated with each of the other symbols from the first set of symbols. Bush teaches creating a collection of vertices, and British General Staff teaches use of path which may be manifested by "vectors" UDRL. If we consider a set of adjacent vertices representing a symbol in the first symbol set then as UDRL span the lattice of vectors they can be used to reach any other symbol from the first symbol set. Claim 21 rejected.

45. As per claim 22, the limitation of informing a recipient of the sequence of symbols from the second set (is disclosed by Bush Column 4, lines 15-40) about a location in the first vertex in the set of vertices, the first vertex being used as the starting point for creating the sequence from second set of symbol and creating the sequence from the second set of symbols is disclosed by the Bush/British General Staff. Claim 22 is rejected.

46. As per claim 23, the limitation of creating different "keys" for different messages is taught by Bush Column 5, lines25-30. Claim 23 is rejected.

47. As per claim 34, a method of creating a graph that includes a plurality of vertices is taught by Bush Column 4 lines 15-40, figure 7 and British General Staff. The limitation of associating each vertex with m edges, the vertices determining the edges and which in the case of a rectangular planar grid which are directed using UDLR and thus form a graph. The limitation of marking (labeling) the vertices (see Bush figure 7) and the edges see British General staff. The limitation of forming a sequence of ciphertext letters that corresponds to the sequences of edges and referring that sequence to the ciphertext message is disclosed by the British General Staff. Claim 34 rejected.

48. As per claim 35, the limitation of decrypting the message created in claim 34 by reversing the process is disclosed by Bush Column 4, lines 15-67 and figure 7 and British General Staff. Claim 35 is rejected.

49. As per claim 36, the limitation of c onstructing the graph of claim 34 by creating the edges from every vertex so that whichever is the next letter in the sequence of plaintext letters constitutes the plaintext message, there is an edge leading into a vertex marked by that letter, is disclosed by Bush (Figure 7) and British General Staff.

50. As per claim 37, a method of defining a sone of vertices in a set of vertices from a plurality of labeled vertices such that there is an edge from at least one vertex of the zone of vertices leasding tinto a vertex marked by that next letter is disclosed by Bush Column 3, lines 19-50 and figure 3, in which Bush consideres planes (Zones) of vertices. Claim 37 is rejected.

51. As per claim 38 the limitation of encrypting a message using the zoned graph construction of claim 37 is thus disclosed by Bush Column 3, lines 19-50, Column 4, lines 15-40, figure 3 and the British General Staff. Claim 38 rejected.

52. As per claim 39, the limitation of decrypting (recovering the original plaintext) from the encryption method of claim 38 is disclosed by Bush Column 3, lines 19-50, Column 4, lines 15-40, figure 3 and the British General Staff. Claim 39 is rejected.

53. The added claims 34-39 have not neccessited the use of new art, therefore **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Response to Arguments

54. Applicant's arguments filed on 23 July 2002, 29 July 2002 and 18 November 2002 and an interview with applicant and his attorney on 12 February 2002 have been fully considered but they are not persuasive.

55. With regards to the applicant's assertion that Nakamura differs from his application in that his invention is a stream cipher and Nakamura is a block cipher, the applicant does not claim a stream cipher.

56. With regards to the applicant's assertion that Nakamura does not teach creating a set of vertices and defining (vectorial) relationship between pairs of vertices the examiner disagrees. First, Nakamura is a 103 rejection in combination with Matsui and thus does not have to teach every aspect of the claimed invention. However, in this case Nakamura does teach creating a set of vertices. However, does Nakamura does meet the claim limitation

57. The set of vertices and edges (links) used to define a graph (for example, figure 1) $G_n = (V, E)$ is indeed used to define associated link vectors $\mathbf{h}_i$ as defined by equation (2) and (3) where the $\mathbf{h}_i$ constitutes a row vector of the matrix h_{ij} and forms a linear basis of the graph space. Note that in the formula (2) that a link e_i always joins a pair of vertices.

58. With regards to the applicant's assertion that Nakamura by "creating a set of vertices" and by "defining a relationship for pairs of vertices in the set of vertices" is address (33) and using this to create an encryption key.

59. Nakamura associates the plaintext P to the character vector $\mathbf{Y}_0$ of G_n and the loop character vectors $\mathbf{Q}_i$ through the link vectors $\mathbf{h}_i$ through the matrix $\mathbb{H} = \{ \mathbf{h}_1, \mathbf{h}_2, \mathbf{h}_3, \ldots \mathbf{h}_m \}$ through equation (13)

$\mathbf{Q}_0 \equiv \mathbb{H}\mathbf{Y} \bmod M$. So $\mathbf{Q}_0$ is *related* to the vertex pairs of the graph through $\mathbb{H} = \{ \mathbf{h}_1, \mathbf{h}_2, \mathbf{h}_3, \ldots \mathbf{h}_m \}$. Then proceeding to page 43, Nakamura proves that all graphs $G_n(\mathbf{Y}_i)$ have

the same loop-character vector $\mathbf{Q}_\theta$ and hence all graphs $G_n(\mathbf{Y}_i)$ are equavalent to the graph $G_n(\mathbf{Y}_0)$ through $\mathbf{Q}_\theta$ which is again defined through the vertex pairs V_i. This equivalence between the graphs is then interpreted as the process of encryption (converting plaintext to ciphertext) with the loop-character playing the roll of the key. As we have argued above, that the character is related to the plaintext graph then Nakamura's key is a vector derived from the graph and its vertex pairs. It should be further remarked that this equivalence along represents an "obstacle" to cryptanalyst as pointed out by Nakamura (last line of page 43). However, if the "obstacle" referred to is more in accordance with what the applicant's discloses in the specification, then Gaines would have to be brought in if the applicant claimed such.

60. If the applicant fails to understand part of the arguments presented or feels that parts have been left out, applicant or his attorney should call examiner. Information is to be found below.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Seal whose telephone number is 703 308 4562. The examiner can normally be reached on M-F, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on703 305 9658. The fax phone numbers for the organization where this application or proceeding is assigned are 703 746 7239 for regular communications and 703 746 7240 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 3900.

Jws
August 11, 2003

AYAZ SHEIKH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100